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A consideration of the number and excellence of the observations fully supports the view which I have stated in introducing this subject: that the only result which could be deduced from the trial of new apparatus would be to test the apparatus, but not to add to the certainty of the conclusion as to the equality of diameters.

The diameter adopted now in the *Nautical Almanac* was inferred from observations made with the Transit and Mural Circle, and therefore agrees very closely with that here deduced from the use of those instruments. That obtained with the Transit-Circle is less by 0″·93.

Royal Observatory, Greenwich,
Dec. 28*th*, 1861.

Table of Comparative Number of Observations of Small Planets. By the Astronomer Royal.

For my own guidance, in arranging the course of observations of the Royal Observatory, I lately thought it necessary to draw out a Table exhibiting the comparative number of observations of the Small Planets between *Mars* and *Jupiter*, on the one hand, as made at all Observatories (in the aggregate) except that of Greenwich, and on the other hand as made at Greenwich. For this purpose, I fixed upon the year 1858, as the latest for which I might presume all observations to be published; and my Assistant, Mr. Carpenter, examined every record to which I have access. The result may, perhaps, be interesting to the Society.

For Small Planets discovered before the middle of 1857.

Name of Planet.		Number of Observatories.	Number of Observations.		Observatory, Greenwich.	Number of Meridional Observations.
			Equatoreal.	Meridional.		
Ceres	①	2	0	21	,,	22
Pallas	②	2	0	12	,,	29
Juno	③	2	0	24	,,	27
Vesta	④	3	0	24	,,	31
Hebe	⑥	4	0	11	,,	19
Iris	⑦	5	14	13	,,	21
Flora	⑧	7	13	47	,,	23

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Name of Planet.		Number of Observatories.	Number of Observations.		Observatory, Greenwich.	Number of Meridional Observations.
			Equatoreal.	Meridional.		
Metis	⑨	1	0	2	,,	16
Hygeia	⑩	0	0	0	,,	1
Parthenope	⑪	3	4	10	,,	13
Egeria	⑬	4	7	8	,,	17
Irene	⑭	0	0	0	,,	6
Eunomia	⑮	4	1	29	,,	22
Psyche	⑯	5	18	7	,,	11
Thetis	⑰	0	0	0	,,	1
Melpomene	⑱	5	10	4	,,	21
Fortuna	⑲	4	6	6	,,	22
Massilia	⑳	6	14	19	,,	21
Lutetia	㉑	1	5	0	,,	11
Calliope	㉒	2	6	2	,,	8
Thalia	㉓	6	4	16	,,	18
Themis	㉔	6	25	8	,,	7
Phocæa	㉕	1	1	0	,,	0
Proserpine	㉖	5	19	4	,,	6
Euterpe	㉗	5	6	33	,,	16
Bellona	㉘	1	34	0	,,	0
Amphitrite	㉙	5	6	9	,,	24
Urania	㉚	5	20	6	,,	22
Pomona	㉜	2	8	0	,,	4
Polyhymnia	㉝	1	4	0	,,	0
Atalanta	㊱	1	1	0	,,	0
Fides	㊲	4	16	0	,,	0
Leda	㊳	3	10	0	,,	2
Lætitia	㊴	4	12	11	,,	32
Daphne	㊶	1	1	0	,,	0
Iris	㊷	0	0	0	,,	2
Ariadne	㊸	3	14	0	,,	11
Nysa	㊹	3	13	1	,,	4
		Sum	292	327		490

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For Small Planets discovered after the middle of 1857.

Name of Planet.		Number of Observatories.	Number of Observations.		Observatory, Greenwich.	Number of Meridional Observations.
			Equatoreal.	Meridional.		
Eugenia	㊺	3	11	0	,,	0
Aglaia	㊼	3	20	0	,,	0
Doris	㊽	2	11	0	,,	0
Pales	㊾	2	11	0	,,	0
Virginia	㊿	3	14	0	,,	0
Nemausa	(51)	5	57	0	,,	7
Europa	(52)	10	62	17	,,	7
Calypso	(53)	8	50	0	,,	0
Alexandra	(54)	6	40	0	,,	2
Pandora	(55)	7	83	0	,,	3
		Sum	359	17		19

It appears from this table that the observations made in the first year of a planet's discovery are almost exclusively extrameridional; but that in subsequent years the meridional observations slightly preponderate. And with regard to these (on which probably the accurate theory and even the permanent retention of planets in the list of our solar system will ultimately depend), it appears that a single Observatory of established regularity of system contributes a greater number of observations than the aggregate of all the others. As regards Greenwich, the increase in the number of small planets has now made it necessary to diminish the attention given to each; but it is probable that the ratio for the different Observatories will not be materially altered.

It appears necessary, therefore, that Observatories of fixed system should still retain these bodies in the list of those to be regularly followed. The observations, however, are extremely onerous, and it is much to be wished that they could be somewhat distributed. Hitherto my efforts to effect an arrangement for this purpose have entirely failed.

Royal Observatory, Greenwich,
1861, *December* 19.